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Title: Careers in biology: an insider perspective

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Careers in biology: an insider perspective

Chauncey R. Gadek, EPC-ES

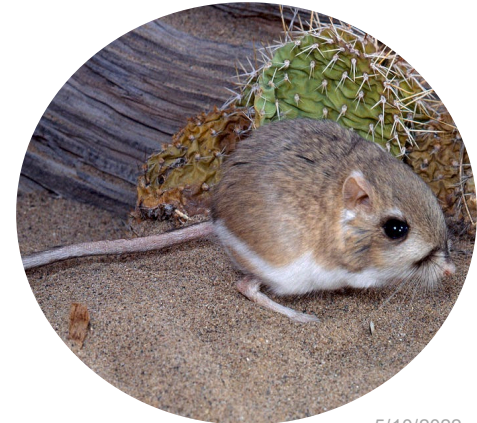
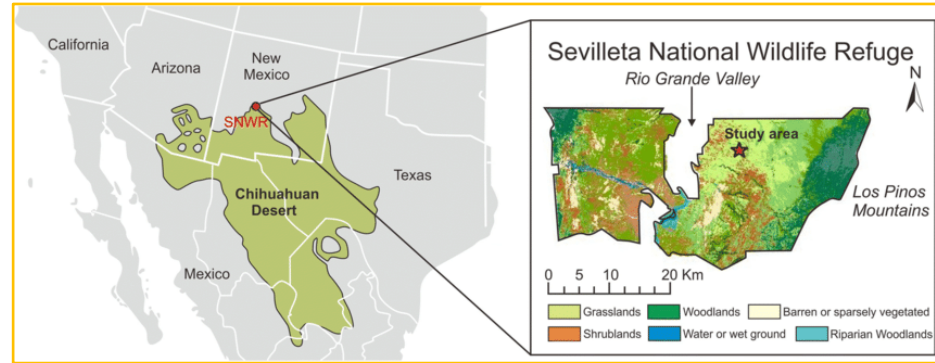
Why I became a biologist?

Education

- Winding journey
- Non-traditional undergraduate and graduate student
 - Interests in genetics/ chemistry
- Study evolutionary ecology at UNM
- Field work in South America and New Mexico
- Half time outdoors collecting data/ half time in front of computer learning to code
- Undertook partial transition into applied conservation

National Wildlife Refuge and long-term ecological data

- Volunteered on long term small mammal research project
- Learned importance of long-term data collection
 - Climate change
 - Population dynamics
- First exposure to field work
 - Handling animals
 - Study designs
 - Type 2 Fun



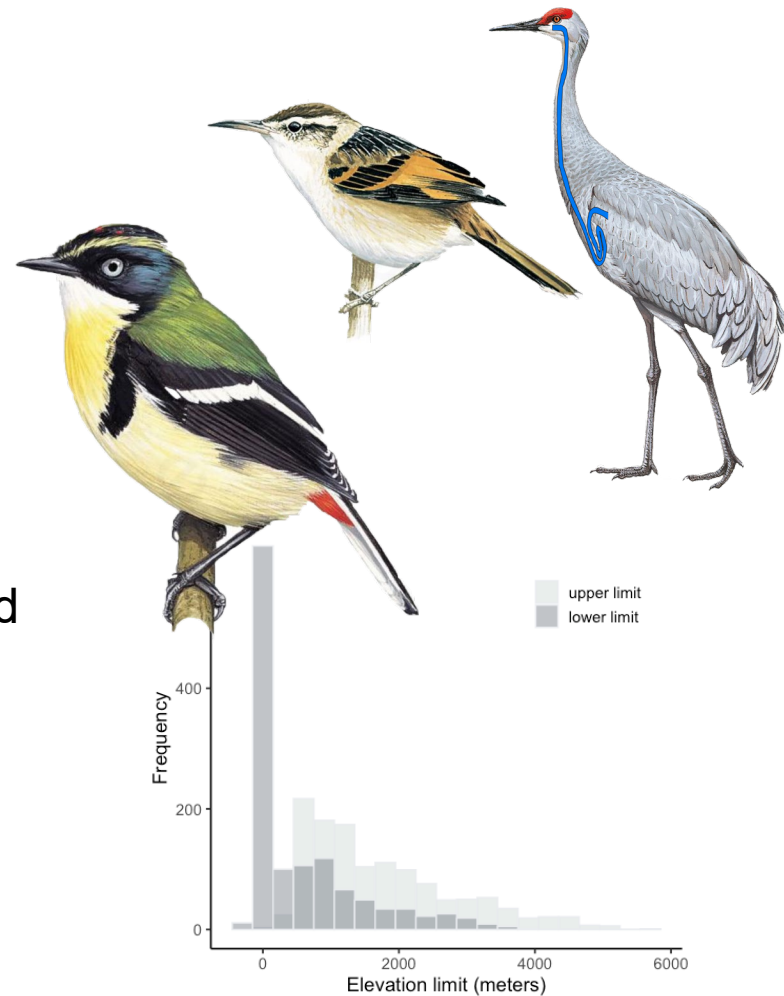
Natural history collection and biodiversity

- Volunteered in Museum of Southwestern Biology
 - Millions of individual specimens (birds, mammals, fish, reptiles, amphibians, parasites, insects, plants)
- Taught me importance of biodiversity collections
 - Raw material of scientific discovery
 - Capture global trends in biodiversity
- Ignited my research career
 - Travel to South America
 - Education in data collection, evolutionary relationships, ecological interactions



Original research

- Why are mountains home to more species?
- How does elevation influence evolution and ecology?
- Why do male and female birds look and sound different?
- How does disease spread in wild bird communities?



Applying research to conservation and compliance

- Laws, policies, and initiatives in place to protect wildlife and habitat
 - Endangered Species Act
 - Migratory Bird Treaty Act
 - 30 by 30
- Research informs good conservation practices
- At LANL we use research to improve conservation efforts and maintain compliance with wildlife protections through:
 - Bird banding
 - Surveying/monitoring/sample collection
 - Modeling/data analysis
 - Outreach and education



Compliance and conservation at LANL

- LANL is home to several threatened and endangered species and provides diverse habitat for migratory birds
- Projects need to be aware of biological resource concerns and comply with federal regulations
- All projects must avoid harm to birds and threatened and endangered species
- Keep LANL as leader in local environmental stewardship
- Often a balancing act between conserving habitat and supporting LANL's mission



Why become a biologist?

- Understanding the natural world
- Basic science produces raw materials of innovation
- Conservation
 - Advocate for wildlife
- Protect biological resources to humans
 - Outdoor spaces
 - Agriculture
 - Lumber
 - Healthy ecosystems prevent natural disasters and disease
- Diverse job opportunities
 - Can involve field work, lab work, writing, consulting, and/or computational skills

Wildlife Biologist



What my friends think I do



What my mom thinks I do



What society thinks I do



What Hollywood thinks I do



What I think I do



What I actually do



Educational paths in New Mexico

- NMSU
 - Strong applied and environmental biology degree options
 - Research opportunities
- UNM
 - High ranked research university
 - Concentrations in conservation biology, sustainability, museum studies
- Highlands
 - Biology, Forestry, and Natural Resource Management degrees offered



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Tips for success

- Seek research opportunities early
- Volunteer for professors and graduate students
- Attend lab meetings
- Gain field experience
- Take statistics, data analysis, and programming classes
- Consider a senior honors thesis if an option
- Hone writing and communication skills